

WHAT IS CLAIMED IS:

1. A method of prophylactically treating a condition, comprising:
contacting a first area of a subject with a metal-containing material to reduce the
5 occurrence of the condition at a second area of the subject,
wherein the first area is different from the second area.
2. The method of claim 1, further comprising:
recognizing a possibility for occurrence of the condition at the second area of the
10 subject; and
after, recognizing the possibility for occurrence of the condition at the second area of
the subject, selecting the first area of the subject for contact with the metal-containing
material to reduce occurrence of the condition at the second area of the subject.
- 15 3. The method of claim 1, wherein the second area is substantially free of the condition
when the first area is contacted with the metal-containing material.
4. The method of claim 1, wherein the second area has the condition when the first area
is contacted with the metal-containing material.
- 20 5. The method of claim 1, wherein the metal-containing material is selected from the
group consisting of metals and alloys.
6. The method of claim 1, wherein the metal-containing material is selected from the
25 group consisting of metal oxides, metal hydroxides, metal nitrides, metal borides, metal
halides, metal carbides, metal phosphides, metal silicates, metal nitrates, metal carbonates,
metal sulfides, metal sulfadiazines, metal acetates, metal lactates, metal citrates, metal
myristates, metal sorbates, metal stearates, metal oleates, metal glutonates, metal adipates,
alkali metal thiosulphates metal hydrides combinations thereof.

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7. The method of claim 1, wherein the metal-containing material comprises a metal selected from the group consisting of silver, gold, platinum, palladium and combinations thereof.

5 8. The method of claim 1, wherein the metal-containing material comprises silver.

9. The method of claim 1, wherein the metal-containing material comprises an ionic material.

10 10. The method of claim 1, wherein the metal-containing material comprises atoms, molecules or clusters.

11. The method of claim 1, wherein the metal-containing material comprises an atomically disordered, crystalline metal-containing material.

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12. The method of claim 11, wherein the metal-containing material comprises a nanocrystalline metal-containing material.

13. The method of claim 12, wherein the metal-containing material comprises a material
20 selected from the group consisting of antimicrobial metal-containing materials, anti-biofilm metal-containing materials, antibacterial metal-containing materials, anti-inflammatory metal-containing materials, antifungal metal-containing materials, antiviral metal-containing materials, anti-autoimmune metal-containing materials, anti-cancer metal-containing materials, pro-apoptosis metal-containing materials, anti-proliferative materials, MMP
25 modulating metal-containing materials and combinations thereof.

14. The method of claim 11, wherein the metal-containing material comprises a material
selected from the group consisting of antimicrobial metal-containing materials, anti-biofilm
metal-containing materials, antibacterial metal-containing materials, anti-inflammatory
30 metal-containing materials, antifungal metal-containing materials, antiviral metal-containing materials, anti-autoimmune metal-containing materials, anti-cancer metal-containing

materials, pro-apoptosis metal-containing materials, anti-proliferative materials, MMP modulating metal-containing materials and combinations thereof.

15. The method of claim 1, wherein the metal-containing material comprises a
5 nanocrystalline metal-containing material.

16. The method of claim 15, wherein the metal-containing material comprises a material selected from the group consisting of antimicrobial metal-containing materials, anti-biofilm metal-containing materials, antibacterial metal-containing materials, anti-inflammatory
10 metal-containing materials, antifungal metal-containing materials, antiviral metal-containing materials, anti-autoimmune metal-containing materials, anti-cancer metal-containing materials, pro-apoptosis metal-containing materials, anti-proliferative materials, MMP modulating metal-containing materials and combinations thereof.

17. The method of claim 1, wherein the metal-containing material comprises a material selected from the group consisting of antimicrobial metal-containing materials, anti-biofilm metal-containing materials, antibacterial metal-containing materials, anti-inflammatory metal-containing materials, antifungal metal-containing materials, antiviral metal-containing materials, anti-autoimmune metal-containing materials, anti-cancer metal-containing
15 materials, pro-apoptosis metal-containing materials, anti-proliferative, materials, MMP modulating metal-containing materials and combinations thereof.

18. The method of claim 1, wherein the condition is selected from the group consisting of bacterial conditions, biofilm conditions, microbial conditions, inflammatory conditions,
25 fungal conditions, viral conditions, autoimmune conditions, hyperproliferative conditions, idiopathic conditions, cancerous conditions and combinations thereof.

19. The method of claim 1, wherein the condition is selected from skin conditions, integument conditions and combinations thereof.

20. The method of claim 19, wherein the condition is selected from the group consisting of bacterial conditions, biofilm conditions, microbial conditions, inflammatory conditions, fungal conditions, viral conditions, autoimmune conditions, idiopathic conditions, hyperproliferative conditions, cancerous conditions and combinations thereof.

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21. The method of claim 19, wherein the condition is selected from the group consisting of a burn, eczema, erythroderma, an insect bite, mycosis fungoides, pyoderma gangrenosum, eythrema multiforme, rosacea, onychomycosis, acne, psoriasis, Reiter's syndrome, pityriasis rubra pilaris, hyperpigmentation, vitiligo, scarring conditions, keloid, lichen planus, age related skin disorders, hyperproliferative variants of the disorders of keratinization and combinations thereof.

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22. The method of claim 1, wherein the condition comprises a respiratory condition.

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23. The method of claim 22, wherein the condition is selected from the group consisting of bacterial conditions, biofilm conditions, microbial conditions, inflammatory conditions, fungal conditions, viral conditions, autoimmune conditions, idiopathic conditions, hyperproliferative conditions, cancerous conditions and combinations thereof.

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24. The method of claim 22, wherein the respiratory condition is selected from the group consisting of asthma, emphysema, bronchitis, pulmonary edema, acute respiratory distress syndrome, bronchopulmonary dysplasia, pulmonary fibrosis, pulmonary atelectasis, tuberculosis, pneumonia, sinusitis, allergic rhinitis, pharyngitis, mucositis, stomatitis, chronic obstructive pulmonary disease, bronchiectasis, lupus pneumonitis, cystic fibrosis and combinations thereof.

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25. The method of claim 1, wherein the condition comprises a musculo-skeletal condition.

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26. The method of claim 25, wherein the condition is selected from the group consisting of bacterial conditions, biofilm conditions, microbial conditions, inflammatory conditions,

fungal conditions, viral conditions, autoimmune conditions, idiopathic conditions, hyperproliferative conditions, cancerous conditions and combinations thereof.

27. The method of claim 25, wherein the musculo-skeletal condition is selected from the group consisting of tendonitis, osteomyelitis, fibromyalgia, bursitis, arthritis and combinations thereof.

28. The method of claim 1, wherein the condition comprises a circulatory condition.

29. The method of claim 28, wherein the condition is selected from the group consisting of bacterial conditions, biofilm conditions, microbial conditions, inflammatory conditions, fungal conditions, viral conditions, autoimmune conditions, idiopathic conditions, hyperproliferative conditions, cancerous conditions and combinations thereof.

30. The method of claim 28, wherein the circulatory condition is selected from the group consisting of arteriosclerosis, lymphoma, septicemia, leukemia, ischemic vascular disease, lymphangitis, atherosclerosis and combinations thereof.

31. The method of claim 1, wherein the condition comprises cancer.

32. The method of claim 31, wherein the cancer is selected from the group consisting of tumors, hematologic malignancies and combinations thereof.

33. The method of claim 1, wherein the condition is selected from the group consisting of mucosal conditions, serosal conditions and combinations thereof.

34. The method of claim 33, wherein the condition is selected from the group consisting of bacterial conditions, biofilm conditions, microbial conditions, inflammatory conditions, fungal conditions, viral conditions, autoimmune conditions, idiopathic conditions, hyperproliferative conditions, cancerous conditions and combinations thereof.

35. The method of claim 33, wherein the condition is selected from the group consisting of pericarditis, Bowen's disease, stomatitis, prostatitis, sinusitis, allergic rhinitis, digestive disorders, peptic ulcers, esophageal ulcers, gastric ulcers, duodenal ulcers, toxic epidermal necrolysis syndrome, Stevens Johnson syndrome, cystic fibrosis, bronchitis, pneumonia,
5 pharyngitis, common cold, ear infections, sore throat, sexually transmitted diseases, inflammatory bowel disease, colitis, hemorrhoids, thrush, dental conditions, oral conditions, conjunctivitis, periodontal conditions and combinations thereof.

36. The method of claim 1, wherein the first area of the subject is selected from the group
10 consisting of a hyperplastic tissue, a tumor tissue, a cancerous lesion and combinations thereof.

37. The method of claim 1, wherein the second area of the subject is selected from the group consisting of a hyperplastic tissue, a tumor tissue, a cancerous lesion and combinations
15 thereof.

38. The method of claim 1, wherein the method prophylactically induces apoptosis at the second area of the subject.

39. The method of claim 1, wherein the method prophylactically modulates matrix metalloproteinases at the second area of the subject.
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40. The method of claim 1, wherein, when contacted with the subject, the metal-containing material is in a solution.
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41. The method of claim 40, wherein the solution is injected.

42. The method of claim 41, wherein the solution is injected via a needleless injector.

43. The method of claim 41, wherein the solution is injected via a needle.
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44. The method of claim 40, wherein the solution contains at least about 0.001 weight percent of the metal-containing material.

45. The method of claim 44, wherein the solution contains about 10 weight percent or less of the metal-containing material.

46. The method of claim 40, wherein the solution further comprises a solvent.

47. The method of claim 40, further comprising:
forming the solution into an aerosol; and
inhaling the aerosol.

48. The method of claim 1, wherein, when contacted with the subject, the metal-containing material is disposed in a pharmaceutically acceptable carrier.

49. The method of claim 48, wherein the composition contains at least about 0.01 weight percent of the metal-containing material.

50. The method of claim 49, wherein the composition contains about 50 weight percent or less of the metal-containing material.

51. The method of claim 48, wherein the pharmaceutically acceptable carrier is selected from the group consisting of creams, ointments, gels, sprays, solutions, drops, powders, lotions, pastes, foams, liposomes and combinations thereof.

52. The method of claim 1, wherein, when contacted with the subject, the metal-containing material is in the form of a free standing powder.

53. The method of claim 52, wherein the free standing powder is inhaled.

54. The method of claim 52, wherein the free standing powder is injected.

55. The method of claim 1, wherein the first area comprises a mucosal membrane and the second area comprises the subject's lungs.

5 56. The method of claim 55, wherein the mucosal membrane is selected from the group consisting of the subject's oral cavity and the subject's nasal cavity.

57. The method of claim 55, wherein the condition is nosocomial pneumonia or ventilator-associated pneumonia.

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58. The method of claim 55, wherein the metal-containing material is in the form of a solution when contacted with the subject.

59. The method of claim 55, wherein the metal-containing material is in the form of a
15 swab, a sponge, a foam, a liposome, a tape, a pill, a capsule, a tablet, a suppository or a lozenge when contacted with the subject.

60. The method of claim 1, wherein the first area is substantially free of the condition when the first contacted with the metal-containing material.

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61. The method of claim 1, wherein the first area has the condition when the first contacted with the metal-containing material.

62. The method of claim 1, wherein the metal-containing material has a prophylactic ratio
25 of about 0.95 or less for the condition.

63. The method of claim 1, wherein, when contacted with the first area of the subject, the metal-containing compound is not in the form of a dressing.

30 64. The method of claim 1, wherein the first area of the subject is not the subject's skin.

65. The method of claim 1, wherein the condition is not a bacterial condition.

66. The method of claim 1, wherein the metal-containing material is selected from the group consisting of silver nitrate, silver hydroxide, silver sulfadiazine, colloidal silver, silver carbonate, silver oxide, silver acetate, silver lactate, silver citrate, silver succinate, silver chlorate, silver sorbate, silver myristate, silver stearate, silver oleate, silver glutonate, silver adipate, alkali silver thiosulphate and combinations thereof.

67. A method of prophylactically treating pneumonia, comprising:
contacting an area of a subject with an atomically disordered, nanocrystalline silver-containing material to reduce the occurrence of pneumonia in the subject,
wherein the area of the subject is selected from the group consisting of the oral cavity and the nasal cavity.

68. The method of claim 67, wherein the condition is nosocomial pneumonia or ventilator-associated pneumonia.

69. The method of claim 67, wherein the metal-containing material is in the form of a solution when contacted with the subject.

70. The method of claim 67, wherein the metal-containing material is in the form of a swab, a sponge, a foam, a liposome, a tape, a pill, a capsule, a tablet, a suppository or a lozenge when contacted with the subject.

71. The method of claim 67, wherein the lungs of the subject are substantially free pneumonia when contacted with the metal-containing material.

72. The method of claim 67, wherein the metal-containing material has a prophylactic ratio of about 0.95 or less for pneumonia.

73. A method of prophylactically treating a condition, comprising:

contacting a first area of a subject with a metal-containing material to reduce the occurrence of the condition at a second area of the subject,
wherein the first area of the subject is an area of the subject other than the skin.

5 74. The method of claim 73, wherein the first and second areas of the subject are the same area of the subject.

75. The method of claim 73, wherein the first area of the subject is selected from the group consisting of a portion of the subject's respiratory system, a portion of the subject's musculo-skeletal system, a portion of the subject's circulatory system, a portion of the
10 subject's gastrointestinal system, a portion of the subject's sublingual area, and a portion of the subject's subdermal area, a hyperplastic tissue and a tumor tissue.

76. A method of prophylactically treating a condition, comprising:
15 contacting a first area of a subject with a metal-containing material to reduce the occurrence of the condition at a second area of the subject,
wherein the metal-containing material is in a form other than a dressing.

77. The method of claim 76, wherein the first and second areas of the subject are the
20 same area of the subject.

78. The method of claim 76, wherein the metal-containing material is in a form selected from the group consisting of a free standing powder, a solution, a pharmaceutically acceptable carrier and a powder impregnated material.

25 79. A method of prophylactically treating a condition, comprising:
contacting a first area of a subject with a metal-containing material to reduce the occurrence of the condition at a second area of the subject,
wherein the condition is a non-bacterial condition.

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80. The method of claim 79, wherein the first and second areas of the subject are the same area of the subject.

81. The method of claim 79, wherein the condition is selected from the group consisting of bacterial conditions, biofilm conditions, microbial conditions, inflammatory conditions, fungal conditions, viral conditions, autoimmune conditions, hyperproliferative conditions, idiopathic conditions, cancerous conditions and combinations thereof.

82. A method of prophylactically treating a condition, comprising:
contacting an object with a metal-containing material to reduce the occurrence of the condition at an area of a subject,
wherein the object is intended to be contacted with the subject or a material in contact with the object is intended to be contacted with the subject.

83. The method of claim 82, further comprising:
recognizing a possibility for occurrence of the condition at the area of the subject; and
after, recognizing the possibility for occurrence of the condition at the area of the subject, selecting the object for contact with the metal-containing material to reduce occurrence of the condition at the area of the subject.

83. The method of claim 82, further comprising; after contacting the object with the metal-containing material, contacting the object with the subject.

84. The method of claim 83, wherein the object is contacted with the area of the subject.

85. The method of claim 83, wherein the object is contacted with a different area of the subject.

86. The method of claim 82, further comprising, after contacting the object with the metal containing material, transferring from the object to the subject the material intended to be transferred to the subject.

87. The method of claim 86, wherein the material transferred to the subject comprises a therapeutic agent.

5 88. The method of claim 86, wherein the material is transferred directly from the object to the subject.

89. The method of claim 86, wherein the material is contacted with the area of the subject.

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90. The method of claim 86, wherein the object is contacted with a different area of the subject.

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91. The method of claim 82, wherein the object is selected from the group consisting of medical devices, surgical instruments, catheters, respiratory equipment, mechanical misters, spray bottles, nebulizers, oxygen tents, dry powder inhalers, needles, needleless injectors, dressings, solution droppers, containers for a solution, and combinations thereof.

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92. The method of claim 82, wherein the area of the subject is substantially free of the condition when the object is contacted with the metal-containing material.

93. The method of claim 82, wherein the area of the subject has the condition when the object is contacted with the metal-containing material.

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94. The method of claim 82, wherein the metal-containing material is selected from the group consisting of metals and alloys.

95. The method of claim 82, wherein the metal-containing material comprises an atomically disordered, crystalline metal-containing material.

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96. The method of claim 82, wherein the metal-containing material comprises a nanocrystalline metal-containing material.

97. The method of claim 82, wherein the metal-containing material comprises a material selected from the group consisting of antimicrobial metal-containing materials, anti-biofilm metal-containing materials, antibacterial metal-containing materials, anti-inflammatory metal-containing materials, antifungal metal-containing materials, antiviral metal-containing materials, anti-autoimmune metal-containing materials, anti-cancer metal-containing materials, pro-apoptosis metal-containing materials, anti-proliferative materials, MMP modulating metal-containing materials and combinations thereof.

98. The method of claim 82, wherein the condition is selected from the group consisting of bacterial conditions, biofilm conditions, microbial conditions, inflammatory conditions, fungal conditions, viral conditions, autoimmune conditions, hyperproliferative conditions, idiopathic conditions, cancerous conditions and combinations thereof.

99. The method of claim 82, wherein the area of the subject is selected from the group consisting of the oral cavity and the nasal cavity.

100. The method of claim 82, wherein the area of the subject is an area of the subject other than the skin.

101. The method of claim 82, wherein the object is in a form other than a dressing.

102. The method of claim 82, wherein the condition is a non-bacterial condition.